U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

# Introduction to Energy Savings Performance Contracts (ESPCs)

# *Agenda*

- Welcome and Introduction
- ESPC Basics
- Phase 1 – Project Planning
- Phase 2 – Energy Service Company (ESCO) Selection
- Phase 3 – Negotiation and Award of Final Task Order
- Cost Elements of an ESPC
- Phase 4 – Design, Construction, and Acceptance
- Phase 5 – Performance Period
- Q&A – Discussion

*There will be a 15-minute break halfway through the presentation*

# Objective of the Webinar



- To provide agency personnel with an introduction to the Super ESPC process and a springboard to obtaining the information and tools needed to ensure that their projects are of the highest possible value.


The Department of Energy's Federal Energy Management Program's (FEMP) mission is to facilitate the Federal Government's implementation of sound, cost-effective energy management and investment practices to enhance the nation's energy security and environmental stewardship. FEMP provides assistance through project transaction services, applied technology services, and decisions support services.

# Assistance for Non-Financed Projects



- Technical and design assistance
- Agencies request services through “Call for Projects”
- Focus on new technologies, new applications, non-standard applications

www1.eere.energy.gov/femp/services/projectassistance.html

# Project Facilitation for Alternatively Financed Energy Project



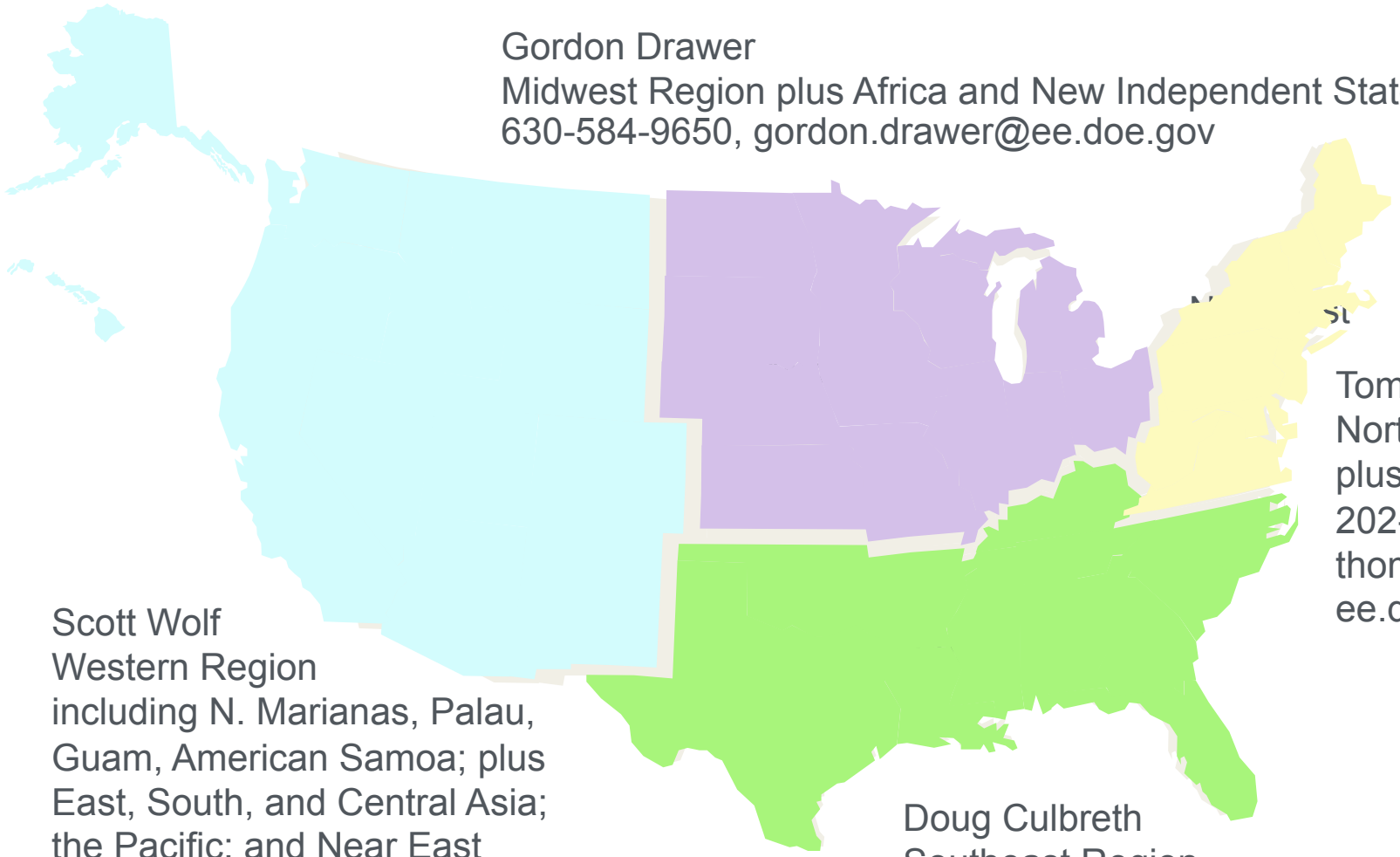
- Project facilitation for ESPCs and Utility Energy Service Contracts (UESCs)
  - Evaluating alternatives
  - Project strategy
  - Audit review and master agreement development
  - Design development
  - Task order implementation

www1.eere.energy.gov/femp/services/project_facilitation.html

(More on project facilitation later)

# FEMP Federal Financing Specialists

www1.eere.energy.gov/femp/financing/espcs_financingspecialists.html



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# Free ESPC Workshops



- Comprehensive Super ESPC (three days)
  - Great way to gain confidence and get started.

- Customized agency workshops available
- Training opportunities www.eere.energy.gov/femp/news/events.html

# FEMP Web Site



- ESPC home
  www1.eere.energy.gov/femp/financing/espcs.html
- ESPC success story (video)
  www1.eere.energy.gov/femp/financing/superespcs_fda.html
- ESPC resources, guidance, contract documents
  www1.eere.energy.gov/femp/financing/espcs_resources.html
- Calendar of Events (all training dates)
  www1.eere.energy.gov/femp/news/events.html

# ESPC Basics

# ESPC Basics



- What is an ESPC?
- Is it legal?
- From ESPC to DOE's "Super ESPC"
- Five phases of a Super ESPC project
- Primary roles in Super ESPC

# Definition of ESPCs



ESPCs are contracts that allow agencies to procure facility improvements with no up-front capital cost and without special appropriations from Congress.

- An energy service company (ESCO)
  - Incurs the cost of developing and implementing the energy project
  - Guarantees a specified level of cost savings
- The customer (agency/site)
  - Pays the ESCO over the term of the contract out of the energy and energy-related (operations & maintenance) savings resulting from the project

# Where the Money Comes from and Where it Go

Agency Energy and O&M Bills

Cost Savings

Savings repay ESCO

ESCO pays for project (with financing)

Improvements create savings

Appropriations for Energy and Related O&M

# Key Points about Federal ESPCs



- Savings guarantees are mandatory
  - Energy and water cost savings
  - Energy- (and water-) related cost savings
- Savings must exceed payments in each year
- Measurement and verification (M&V) is mandatory
- Contract term cannot exceed 25 years

# Are these things legal? YES!!!



- Authorities:
  - National Energy Conservation Policy Act (42 USC 8287), Title VIII Shared Energy Savings (1986)
  - Energy Policy Act (EPACT), Public Law 102-486 (1992)
  - DoD Authorization Act FY05, Public Law 108-375 (2004)
  - Energy Policy Act of 2005
  - Energy Independence and Security Act of 2007 (H.R. 6 ENR) – permanent reauthorization
- Precedents:
  - First federal projects in mid-1990s
  - Super ESPCs: 11 years, 200+ projects

# Super ESPC



- Super ESPCs are indefinite-delivery, indefinite-quantity (IDIQ) contracts awarded competitively to ESCOs by DOE-FEMP
  - IDIQ defined in Federal Acquisition Regulations (FAR)
  - Agencies award task orders (TOs) for energy projects under the Super ESPCs (as under any multi-award contract)
  - WHY? To streamline and make as cost-effective as possible the use of ESPC by federal agencies
- Other approaches
  - Stand-alone or individual contracts
    - Business as usual – Synopsis, solicitation, etc.
    - Substantial agency effort required
  - Other federal ESPC vehicles
    - Army Corps
    - GSA Schedule

# Super ESPC Contract Scope



- Federally owned facilities worldwide
- Technologies – list of 20 categories in IDIQ attachment J-3
  - Everything from exit signs to industrial boilers
  - Must save money from energy or water bills, or energy-related operations & maintenance
    - Measures that reduce demand (kW) only (e.g., thermal storage) acceptable and encouraged
  - Last category is “Future ECMs”

# ESCO Selection



- Agency sends notice to all 16 ESCOs with requirements and selection criteria
  - Requirements: e.g., buildings, ECMs to include
  - Selection criteria: e.g., technical approach, past performance, price (required)
- Some agencies may choose to “down-select” based on preliminary information submitted by ESCOs
- One or more ESCOs submit proposals
- Agency, using “fair consideration,” issues statement selecting one based on best value
  - Here – not at award – is where protest could occur

# Roles: Ordering Agency



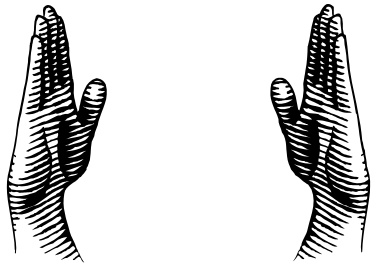
- Responsible for ensuring Super ESPC vehicle and potential project are in government's best interest
- Appoints TO acquisition team
- Reviews initial proposal and final proposal
- Negotiates through the site/agency CO
- Awards and administers TOs
- Reviews/approves ESCO's design
- Provides construction oversight/acceptance

# Costs for FEMP and PF Support



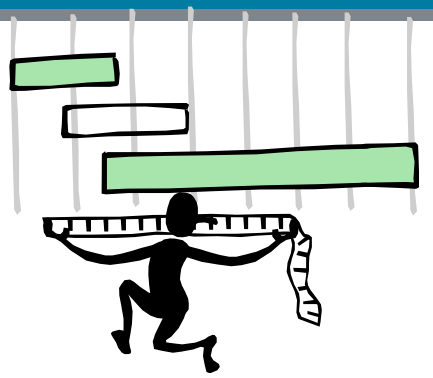
- FEMP FFS and national lab services are free
- PF services are free through ESCOs' preliminary assessment (PA)
  - But reimbursable beyond that
    - Customary PF cost to agency usually ~ $40-50K
  - Hired through Inter-Agency Agreement (IAA) with DOE under Skaggs Amendment (exempt from Economy Act)
  - FFS coordinates IAA with agency
  - Standard PF SOW can be tailored for site's needs

# Introduction to Measurement & Verification in Super ESPCs



# Why do you need M&V?





- Savings guarantees are contractually and legally required
- But guarantees are only as good as the M&V behind them
- M&V verifies guarantees are being met
- M&V helps to allocate risk and identify problems

"What you don't measure, you can't manage."
—Jack Welch, former GE CEO

# Basic M&V Concepts



- M&V methods should balance savings assurance against added cost
- If M&V plan is weak, guarantee will be met only on paper
- The degree of M&V should be proportional to
  1) the ECM's savings; and
  2) the ECM's performance risk
- Good M&V plans require ESCOs to measure key performance parameters of ECMs

# Options A, B, C, and D



- Each ECM is assigned an M&V option:  A, B, C, or D
  - Options address risk allocation
- Measurements of each option differ by:
  - Level – individual system vs. whole building
  - Duration – spot, short-term, periodic, continual
  - Degree of stipulation
    - For more information on stipulation in M&V, see FEMP ESPC resources
      - 2.6: Introduction to Measurement and Verification (M&V) for FEMP ESPC Projects
- Cost can range from 1-15% of project cost, average is 3%

# Guidance on M&V



- FEMP M&V Guidelines v. 3.0
  - M&V specifically for federal energy projects
  - Application of International Performance Measurement and Verification Protocol (IPMVP)
  - Addresses M&V methods by ECM type
  - On line under #10.2 at *www1.eere.energy.gov/femp/financing/espcs_resources.html (FEMP ESPC Resources page)*

- Introduction to M&V for FEMP ESPC Projects (2.6 on FEMP Resources page)
- Other M&V guidance on FEMP ESPC Resources page: 2.5, section 6, section 8, and section 10

# How is the guarantee met?



- Savings must exceed payments
  - This is cardinal rule of federal ESPC
- Savings that may be used to pay the ESCO are categorized as:
  - Energy and water cost savings
  - Energy- (and water-) related cost savings

# Energy Cost Savings



- Reductions in system use
- Efficiency improvements
- Reductions in peak demand
- Reductions in energy rates
- Shifting time-of-use to lower-cost periods
- Switching to less expensive fuels
- Self-generation (inc. cogeneration/CHP)
- Reduced water and sewer use/cost

# Energy-Related Cost Savings



- Usually recurring savings, primarily reduced O&M expenses:
  - Parts & labor costs
  - Emergency repair costs
  - Equipment replacement costs
- Cost savings must come from existing budgets!

# One-Time Energy-Related Cost Savings



- Cost avoidance provided by the project:
  - EX: Including chiller replacement funds in project where funds were planned to be paid out of O&M or repair & replacement budgets
- Implementation period energy savings
  - Savings accrued from ECMs that are installed and performing in advance of project acceptance
- More info on acceptable sources of savings:
  - “Practical Guide to Savings and Payments in Federal ESPC Projects,” available on FEMP ESPC website

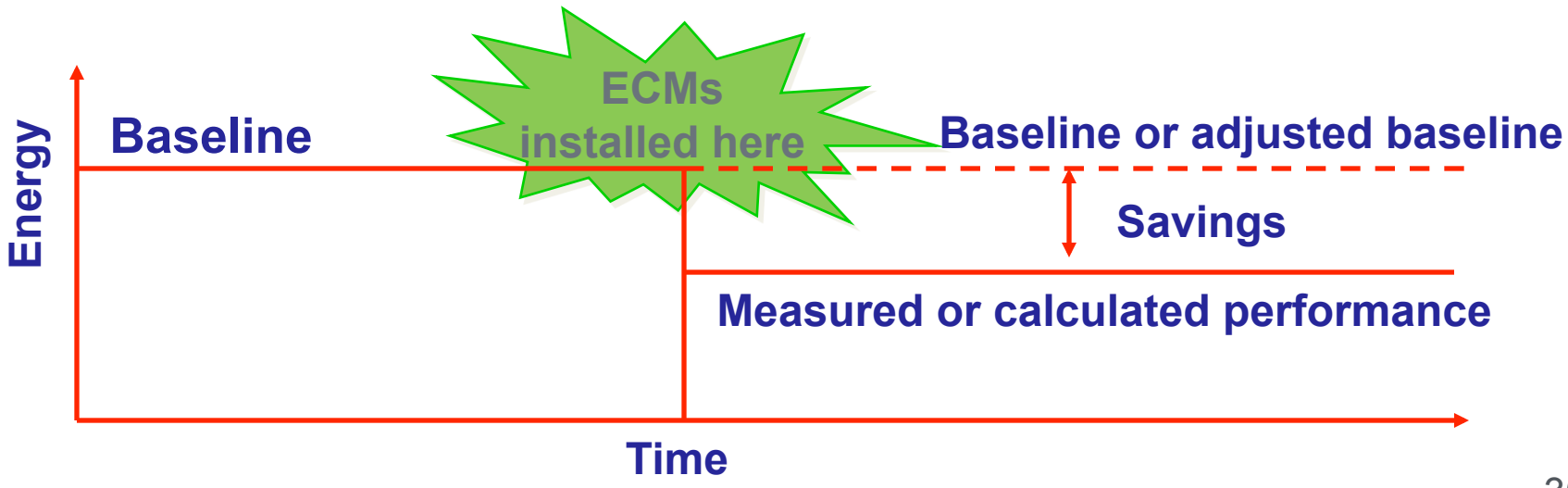
# Definition of Savings



$$\text{Energy Savings} = \text{Use}_{\text{Baseline}} - \text{Use}_{\text{Post-Retrofit}}$$

$$\text{Energy Savings} = (\text{Use}_{\text{Baseline}} \pm \text{Adjustment}) - \text{Use}_{\text{Post-Retrofit}}$$

$$\text{Savings (\$)} = \text{Unit Cost} \times \text{Energy Savings}$$



# Calculating Savings



- There are two components to energy use:
  - Performance (rate of energy use)
  - Usage (hours of use)
- Energy use is the product of the two
  - Example: kW (rate) × hours = kWh (total energy)
- Reducing the rate of energy use and/or the number of hours reduces the total energy use

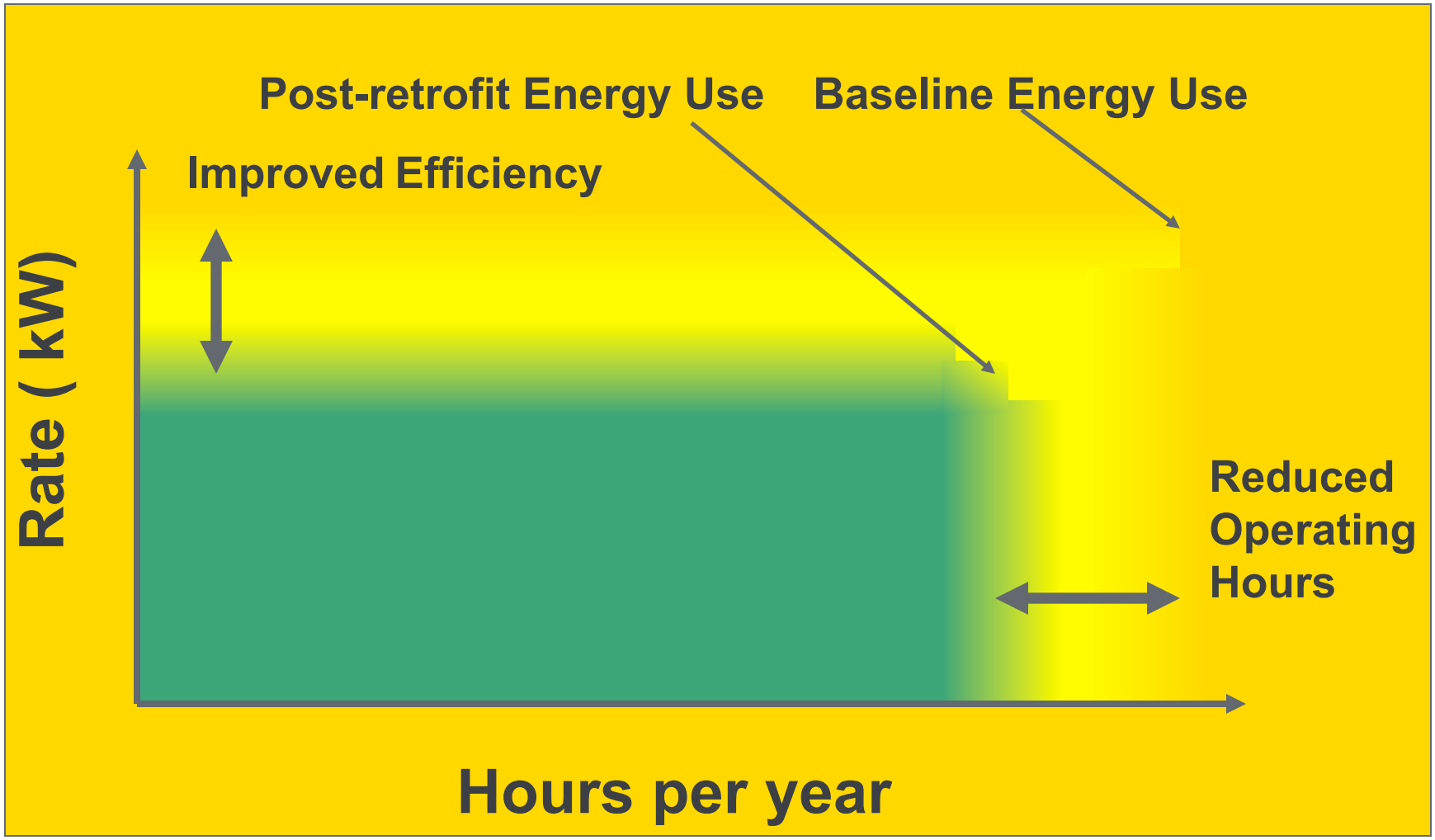
Improved Efficiency

Rate (kW)

Reduced
Operating
Hours

# Performance and Usage: Real





# Super ESPC Process, Phase 1 – 5



- Phase 1: Project Planning
- Phase 2: Preliminary Assessment / ESCO Selection
- Phase 3: Negotiation and Award of Task Order
- Phase 4: Design and Construction, Project Acceptance
- Phase 5: Performance Period

# ESPC Process – Phase 1



## Phase 1 – Project Planning
## Set the stage for a successful project

| | | |
|---|---|---|
| Get started with FEMP Federal Financing Specialist | Assemble Acquisition Team | Consider project motivations and site needs |

# Phase 1: Project Planning



- The purpose of this section is to describe activities that will set the stage for a successful project:
  - Identify acquisition team members
  - Consider project motivation – energy savings, infrastructure improvement, both?
  - Review issues to consider early
  - Learn how to get started with an ESCO

# Getting Started



- A FEMP Federal Financing Special (FFS) will help you get started
  - Identify and educate decision makers and other staff
  - Secure the services of a DOE-qualified Project Facilitator (required) through an interagency agreement
    - Project facilitation is provided by FEMP at no cost to agency through preliminary assessment review

- Keep in mind:  No one expects you to do an ESPC project without the help of FEMP's ESPC team – FFS, PF, and others

# Agency Effort Required



- Level of effort varies by project
  - Factors include:
    - ESPC experience on acquisition team
    - project complexity and size
    - agency approval process
- Biggest responsibilities with energy/facility manager and contracting office
  - Other acquisition team members engaged as needed, when needed

# Acquisition Team



- Everyone who could help or hinder (or be affected by) project should be invited
  - Contracting officer & site technical representative
  - Facility manager and facility maintenance staff
  - Energy, design, and construction engineers
  - Procurement and legal staff
  - Budget/comptroller representative
  - Union reps, labor relations
  - Agency customers and tenants
  - Environment, health, safety
  - Security representative

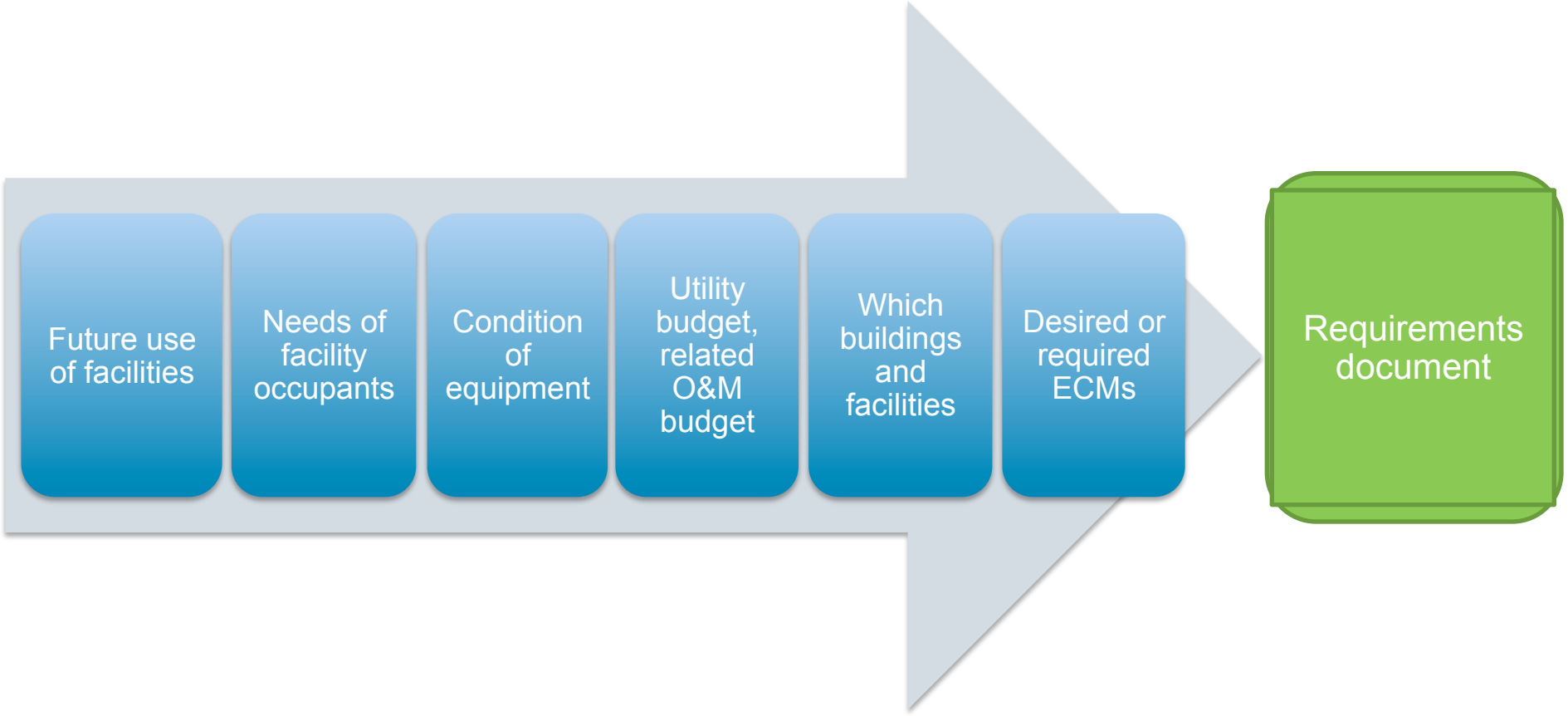
# Acquisition Team Strategy



- Define team roles
- Determine means to inform upper management
- Familiarize team with the benefits and operations of Super ESPC
  - Encourage members to attend Super ESPC webinars and/or workshop
- Generate requirements document for ESCOs

# Key Issues for Team to Address






**Prepare to engage with ESCOs and direct their efforts to address your site's needs and priorities.**

# Down-Selection of ESCOs



- Not required, but advisable to make process more manageable
  - Desired result is subset of interested ESCOs – e.g., 2 to 5 – that will be chosen to produce preliminary assessments (PAs)
- Based on response to request for qualifications as part of notice to ESCOs

# ESCOs' Preliminary Site Surveys



- Walk-through assessment to gather data for the Preliminary Assessments, inc.:
  - Agency's required and desired ECMs
  - Other ECMs uncovered by ESCO
  - Agency-furnished utility bills
  - Current building and equipment data
  - Staff interviews
- Agency provides site access and escort (if applicable)

## Phase 2 – Preliminary Assessment / ESCO Selection

| Review preliminary assessment (s) and ESCO qualifications | Select a winner | Issue Notice of Intent to Award |
|---|---|---|

**An ESPC is a long-term deal – choose a partner you can live with**

# The Preliminary Assessment



- Must comply with IDIQ contract requirements (see section H.4) and give sufficient information for a decision
- Key elements:
  - A narrative summary of proposed project
  - Description of ECMs
  - Estimates of proposed energy and cost savings
  - M&V approach (general)
  - Risk, Responsibility and Performance Matrix
  - Financial schedules

# M&V Approach in PA



- This is an overview, not a complete plan
  - Describes intended approach
  - Should address M&V options (A, B, C, and D)
  - Point of departure for M&V discussion with agency
- Allows agency and the contractor to develop a satisfactory M&V Plan
  - M&V Plan is part of final proposal, following IGA

# PA Review – General Issues



- Is the proposed scope sufficiently comprehensive?
- Does this meet (or can it be adjusted to meet) the majority of our needs?
- Is it a good deal for the government?
- Can our agency and the ESCO have a good long-term partnership?

# PA Review – Specific Issues



- Are ECM descriptions and projected energy savings reasonable?
- Is M&V approach appropriate?
- Is estimated annual cost savings reasonable and consistent with technical approach?
- Are contract term and total cost acceptable?

# Evaluating ESCOs' Technical Approach



- Things to consider:
  - Technical strengths, management approach, etc.
  - Comprehensiveness/depth of proposed scope
  - Responsiveness to your desired ECMs and approach
- Invite ESCOs to make presentations
  - This may help in selecting among few finalists

# Evaluating ESCO Qualifications and Past Performance



- Evaluating ESCO's qualifications
  - Review ESCOs' qualification statements: http://www1.eere.energy.gov/femp/financing/espcs_doeescos.html
  - Ask for contact info for ESCOs' past customers
  - Review ESCOs' financial standing (e.g., Moody's, Standard & Poor's)

# Evaluating the Price Estimate



- Project development costs
- ECMs' costs
- Indirect costs and profit
- Financing costs
- Costs of performance period services

- (More to come on pricing and TO Financial Schedules)

# IF YES:

- You can accept one of the proposals and provide feedback to the ESCO
  - Feedback to address deficiencies and desired changes
  - These items to be addressed in the IGA and final proposal
- All other Preliminary Assessments are returned to the issuing ESCOs

# To Proceed or Not to Proceed



## IF NO:

- You can return an none is satisfactory
  - Scrap the project, or
  - Consider starting over by issuing a new set of requirements to all 16 ESCOs (but you do not own the previous ESCOs' PAs)

# The Notice of Intent to Award (NOI)

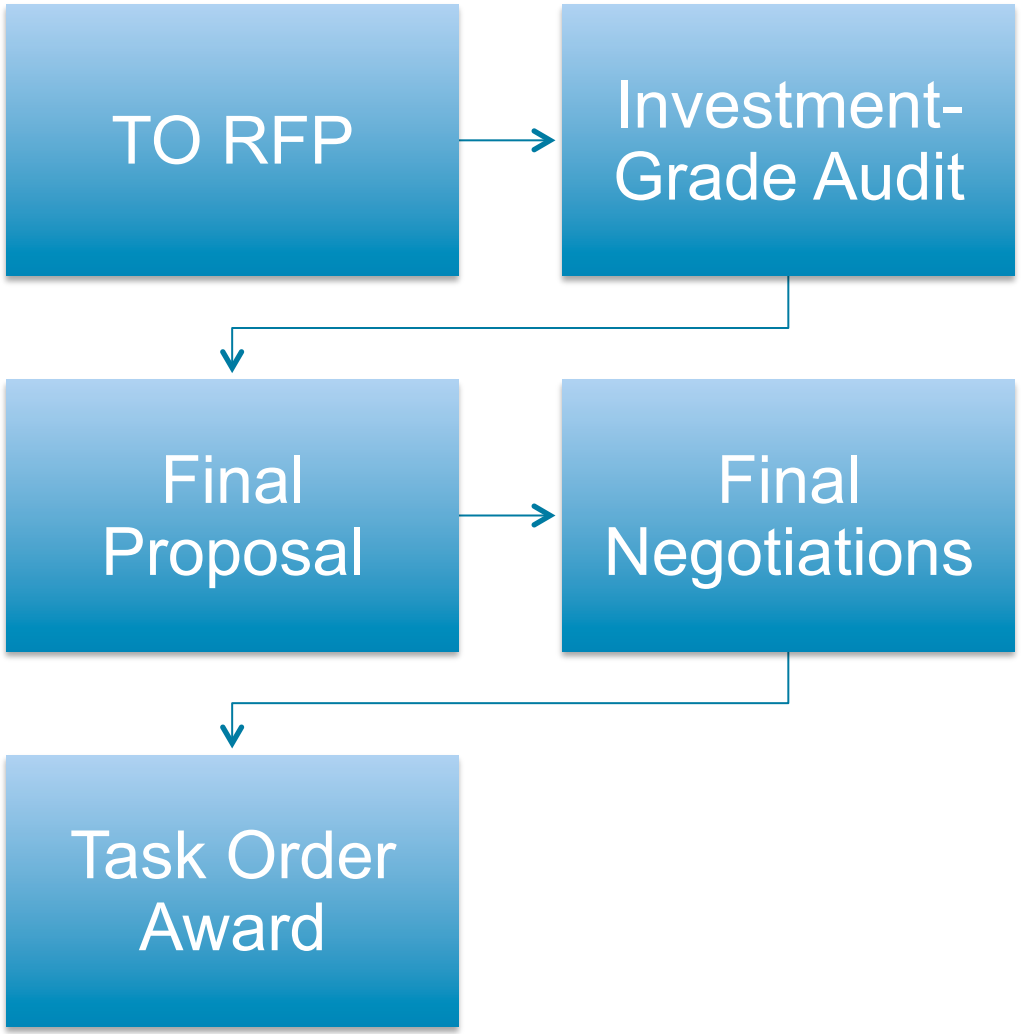


- Before issuing NOI
  - Confirm intent to proceed with all site and other affected personnel

- Notice
  - Signifies selection of ESCO and formalizes decision to proceed
  - Specifies timeframe for completion of IGA and final proposal
  - Outlines any pre-award requirements (such as proof of insurance)

# Phase 3: Negotiation and Award of Final Task Order





# Kickoff Meeting for IGA



- Held on site; facilitated by PF
- Introductions — ESCO project developers, agency personnel
- Establish milestones and TO award schedule
- Review requirements for submission of final proposal (i.e., content, level of detail)
- Review access and security procedures
- Clarify agency/site-specific requirements
- Establish communications protocols

# The Investment Grade Audit (IGA)



- Augments, refines and updates the PA data; establishes M&V baselines
- Agency should share any new or changed information with ESCO
  - Scope revisions
  - Problems and opportunities
- Agency facilitates site access
  - IGA will generally require multiple visits from ESCO, subs

# TO RFP (a Misnomer)



- Establishes site-specific requirements
  - Examples:  standards of service, specifications for drawings, agency procurement contacts and procedures, handling of hazardous materials, security procedures
- Replaces or adds to IDIQ language
- Template includes clauses that are usually modified
- Supercedes (overrides) IDIQ language

- Your Project Facilitator will write a draft, in consultation with site experts

# TO RFP will change some provisions, but not all



- Not all contract provisions are addressed in TO RFP, but all may be altered (see Section C.1 of IDIQ)
  - If changes are not necessary (existing IDIQ language/ requirement is acceptable), that clause will not be addressed in the TO RFP
  - Some provisions require inclusion of agency-specific information and must be addressed
  - TO RFP can be used to add requirements not addressed by IDIQ by adding provisions

# The Final Proposal

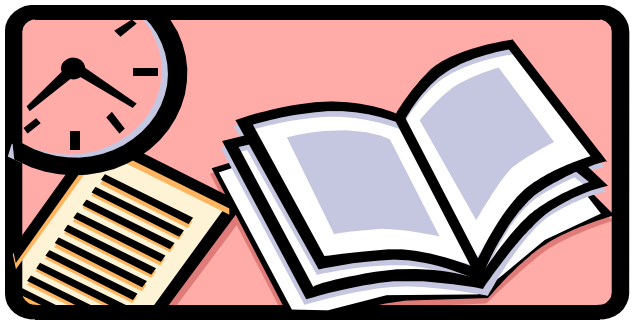


- Integration of IDIQ, TO RFP, IGA, and financing
- Technical portion
  - ECMs: energy savings calculations, implementation costs, annual cost savings
  - M&V methodology and energy/O&M baselines
  - Commissioning approach (not full plan)
  - Management plan, including RR&P matrix
- Pricing portion
  - TO schedules
  - Level of supporting detail per TO RFP
  - Financing summary

# Review of Final Proposal



- Reconvene the acquisition team and assign parts of proposal to appropriate personnel
- Develop a plan and set aside sufficient time for review
- (More on review of final proposal in later modules)



# A Team Approach



- Agency acquisition team
  - Overall approach and strategy
  - Ultimate responsibility for reasonableness and acceptability of final proposal
  - Attention to all elements
- Supported by
  - Project Facilitator
  - National Lab representative (sometimes called “Core Team” guy)
  - FFS

# Negotiation of Final TO



- Includes agreement on TO schedules and payment terms
- Needs to factor in information from IGA findings
  - Some findings may differ from agency expectations and also from assumptions in PA
- Agency must revise TO RFP to capture all negotiated items

# Award of Task Order

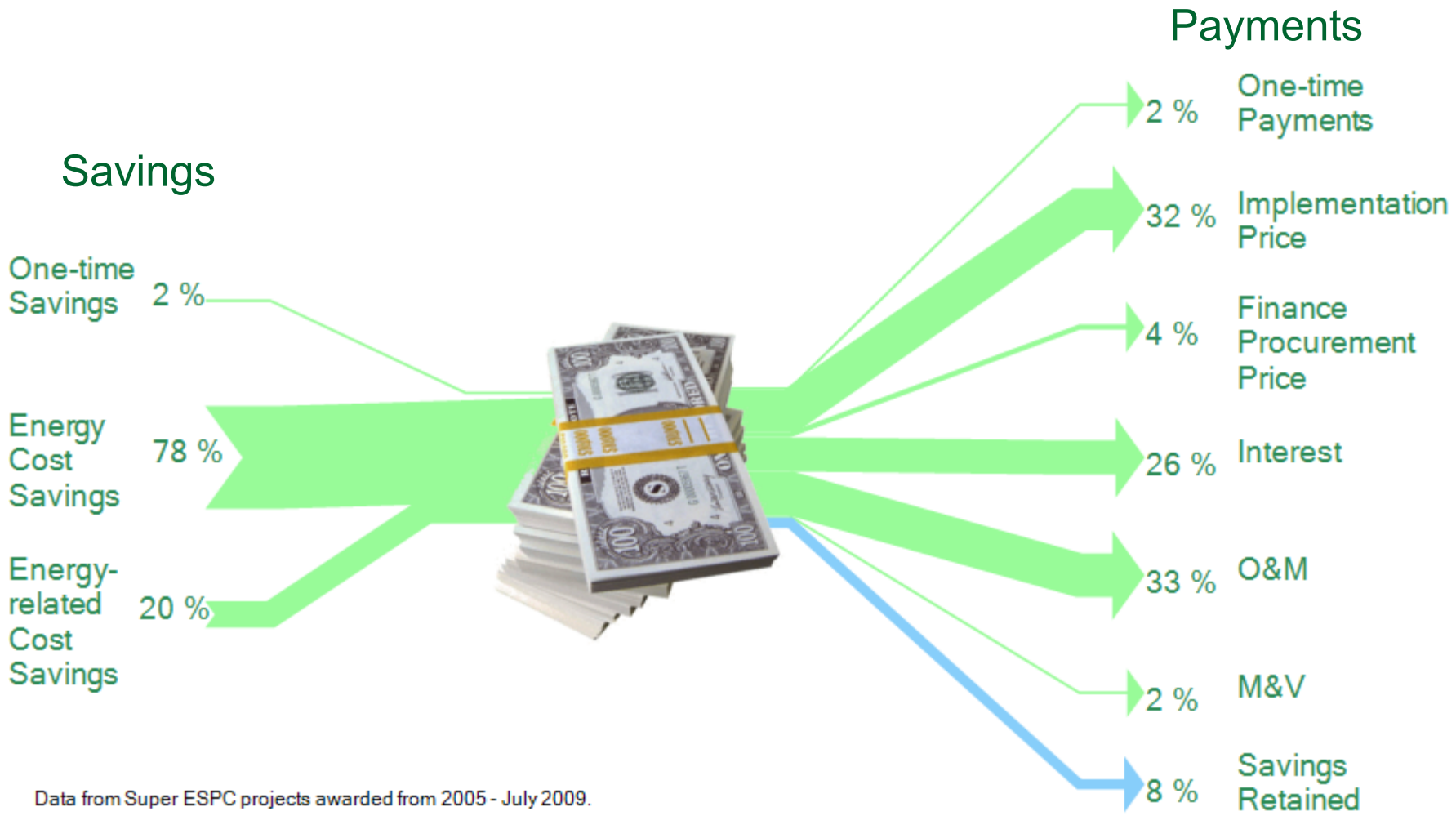


- TO is signed and awarded by the agency CO
- The Task Order consists of:
  - Face page
  - TO price schedules
  - TO RFP, revised per negotiations
  - ESCO's final proposal, revised per negotiations
  - Subcontracting plan

# Cost Elements and TO Financial Schedules

- Project development costs
- Costs for design, installation, and M&V of ECMs
- Indirect costs and profit
- Financing costs
- Performance period services

# Percent of Agency Payments Over Term




Data from Super ESPC projects awarded from 2005 - July 2009.
Figures may not add to exactly 100% due to rounding.

# Task Order Financial Schedules



- TO-1 — Guaranteed Annual Cost Savings & Annual Contractor Payments
- TO-2 — Implementation Price for ECMs
- TO-3 — Performance-Period Cash Flow
  - Financing info, annual cash flows
- TO-4 — First-Year Energy & Cost Savings by ECM and Technology Category
  - Savings breakout by ECM
- TO-5 — Annual cancellation ceilings

## SCHEDULE TO-1 (final)

## GUARANTEED COST SAVINGS AND CONTRACTOR PAYMENTS

IMPORTANT INFORMATION

(1) This schedule is not to be altered or changed in any way. Please note any clarifications in the comments/explanations area below.

(2) The first year post-acceptance performance period estimated annual cost savings reflect technical proposal and engineering estimates as p TO-4.

(3) The guaranteed annual cost savings are based on the site-specific M&V plan.

(4) The total of contractor payments (columns c and f) represents the TO price and should be supported by information submitted in and provid Schedules TO-2 and TO-3.

(5) If applicable, prior to post-acceptance performance period, implementation period allowable payments and energy savings are one time amo

(6) If applicable, provide a separate table showing proposed energy rates (i.e., $/kWh, $kW, $/MBtu) for each post-acceptance performance pe derived using the National Institute of Standards and Technology Handbook 135 and Annual Supplement. Also, submit escalation rates ap energy-related O&M savings (including water and sewer):____% per year.

(7) [Reserved]

(8) [Reserved]

(9) [Reserved]

(10) If selected, the contractor shall complete the installation of all proposed ECMs not later than _____ months after TO award.

| Task Order No.: | Contractor Name: | Project Site: |
|---|---|---|

| | (a) Estimated Cost Savings ($) | (b) Guaranteed Cost Savings ($) | (c) Contractor Payment ($) |
|---|---|---|---|
| Implementation Period | 117,095 | 117,000 | 117,000 |
| Post-Acceptance Performance Period Year | (d) Estimated Annual Cost Savings ($) | (e) Guaranteed Annual Cost Savings ($) | (f) Annual Contractor Payments ($) |
| One | 285,640 | 276,384 | 276,383 |
| Two | 294,095 | 284,572 | 284,571 |
| Three | 294,596 | 285,226 | 285,225 |
| Four | | | |
| Five | | | |
| Totals | 4,022,293 | 3,741,531 | 3,741,519 |

# Savings: How long do you pay?



- Contract term is based on savings flow required to pay off investment
  - Remember: savings must exceed payments each year
  - Construction period is also part of contract term
- Investment is detailed in TO-2
- Financing, debt repayment, and service-phase expenses are detailed in TO-3 spreadsheet

## SCHEDULE TO-2
## IMPLEMENTATION PRICE BY ENERGY CONSERVATION MEASURE

**IMPORTANT INFORMATION:**

1) This schedule is not to be altered or changed in any way. Please note any clarifications in the comments/explanations area below.
2) Implementation expense shall include only direct costs for each ECM and no post-acceptance performance period expenses. Indirect expenses and profit will be applied to the sum of direct expenses for all ECMs and project development to calculate total implementation price (d) for the project.
3) Contractor shall attach adequate supporting information detailing total implementation expenses.
4) Contractor shall propose bonded amount representing the basis of establishing performance and payment bonds per Section H of the contract, as required.
5) Attached supporting information shall be presented to identify portions of ECM or project expenses included in proposed bonded amount.
6) Proposed bonded amount is assumed to include indirect expenses and profit applied to implementation expenses above, unless otherwise specified by contractor.
7) For the following ECMs, enter the *total installed capacity of new equipment* in the units specified (e.g., chillers-150); chillers and packaged units in tons, VFDs in hp, boilers and furnaces in input Btu/hr, BAS/EMCS in number of points, transformers in kVA, generators in kW. For lighting ECMs, specify baseline kW treated.
8) M&V expense shall not include any performance-period expenses.

| Project Site: | Task Order No.: | Contractor Name: |
|---|---|---|

| Tech Category (TC) | ECM No. | Equipment Description — Title | ECM Size | M&V Expense | Implementation Expense | | (c) Profit $ | (d) Implementation Price: Totals (a)+(b)+(c) = (d) |
|---|---|---|---|---|---|---|---|---|
| | | | | | (a) Direct | (b) Indirect | | |
| n/a | n/a | Project Development | n/a | $ | $ | | | |
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| TOTALS | | | | | $ | $ | $ | $ |
| Bonded Amount ($) | | | | | | | | |

Explanations/Comments:

## SCHEDULE TO-3 — POST-ACCEPTANCE PERFORMANCE PERIOD CASH FLOW

| **Project Site:** | **Task Order No:** | **Contractor Name:** |
|---|---|---|

| **Project Capitalization** | | Applicable Financial Index: | Issue Date: |
|---|---|---|---|
| Total Implementation Price (from TO-2 Total) | 2,036,037 | Term (Years): | Source: |
| Plus Financing Procurement Price ($) | | Index Rate: | Effective Through: |
| Less Implementation Period Payments (from TO-1 (final) (c))*(If proposed, must be fully documented)* | | Added Premium (adjusted for tax incentives): | |
| Total Amount Financed (Principal) | | Project Interest Rate: | |

| Term | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Annual Cash Flow (Post-Acceptance Performance Period) | | | | | | |
| Debt Service | | | | | | |
| Principal Repayment ($) | | | | | | |
| Less incentives (i.e., REC, White Tag, etc.) | | | | | | |
| Net principal repayment before interest | | | | | | |
| Interest ($) | | | | | | |
| Total Debt Service (a) | | | | | | |
| **Post-Acceptance Performance Period Expenses** | | | | | | |
| Management/Administration | | | | | | |
| Operation | | | | | | |
| Maintenance | | | | | | |
| Repair and Replacement | | | | | | |
| Measurement and Verification | | | | | | |
| Permits and Licenses | | | | | | |
| Insurance | | | | | | |
| Property Taxes | | | | | | |
| Other – Describe and Explain | | | | | | |
| Other – Describe and Explain | | | | | | |
| SUBTOTAL Before Application of Indirect Rates | | | | | | |
| Indirect Cost Rate (%) | | | | | | |
| Indirect Cost Applied ($) | | | | | | |
| SUBTOTAL Post-Acceptance Performance Period Exp | | | | | | |
| Post-Acceptance Performance Period Profit (%) | | | | | | |
| Post-Acceptance Performance Period Profit ($) | | | | | | |
| Total Post-Acceptance Performance Period Expenses (b) | | | | | | |
| TOTAL - ANNUAL CONTRACTOR PAYMENTS (a)+(b) | | | | | | |

**SCHEDULE TO-4**

**Task Order Performance Period First Year Estimated Annual Cost Savings, by Energy Conservation Measure and Technology Category**

**IMPORTANT INFORMATION:**

1) Project Square Footage (in 1000 SF) - Include only building square footage affected by installed ECMs in project.
2) For column (a) insert estimated energy baseline by ECM and total project in MBtu based on IGA, and proposal data.
3) For column (c1), annual electric demand savings (kW/yr) is the sum of the monthly demand savings
4) Energy conversion factors for MBtu: MBtu=$10^6$ Btu; Electricity — 0.003413 MBtu/kWh; Natural Gas — 0.1 MBtu/therm ; #2 Oil — 0.128 MBtu/gal.
5) Specify "Other" energy savings in (e)(1) and (e)(2) as applicable. Include energy type ____; energy units _____; and MBtu conversion factor _____ MBtu/ _____ (unit)
6) This schedule is not to be altered or adapted in any way. Please note any clarifications in the comments/explanations area below.

Project Site: Task Order#: Contractor Name: Project Square Footage (KSF):

| TC No. Att 2 | ECM No. | a. ECM energy baseline (MBtu/yr) | b1. Electric energy savings (kWh/yr) | b2. Electric energy savings ($/yr) | c1. Electric demand savings (kW/yr) | c2. Electric demand savings ($/yr) | d1. Natural gas savings (MBtu/yr) | d2. Natural gas savings ($/yr) | e1. Other savings (MBtu/yr) | e2. Other savings ($/yr) | f. b1+d1+e1 Total energy savings (MBtu/yr) | g.=b2+c2+d2 +e2 Total energy cost savings ($/yr) | h. Other energy-related and O&M cost savings ($/yr) | i. Water savings (1000 gal/yr) | j. Water savings ($/yr) | k=g+h+-j Estimated annual cost savings ($yr) | l. Implementation price ($) | m=l/k Simple Payback (yrs.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | |
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| TOTALS | | | | | | | | | | | | | | | | | | |

Explanations/Comments:

# One More Schedule: TO-5



- Annual Cancellation Ceiling Schedule
  - Required by ESPC legislation
  - Mutually agreed upon by agency and ESCO
  - Shows outstanding liability and capital investment portion of liability for each year of term

## SCHEDULE TO-5

## ANNUAL CANCELLATION CEILING SCHEDULE

**IMPORTANT INFORMATION:**

(1) Cancellation Ceilings for each time period specified below establish the maximum termination liability for that time period, and includes the remaining unamortized principal on total amount financed for each time period specified above plus any prepayment charges. Actual total termination costs will be negotiated.

(2) The contractor may attach a monthly Financing Termination Liability Schedule.

(3) In the event of TO cancellation or termination for convenience, FAR 52.217-2 or 52.249.2 will apply.

| Project Site: | Task Order No: | Contractor Name: |
|---|---|---|
| | | |

| Time Period | Cancellation Ceiling |
|---|---|
| Installation Acceptance | |
| End of Year One | |
| End of Year Two | |
| End of Year Three | |
| End of Year Four | |
| End of Year Five | |
| End of Year Six | |
| End of Year Seven | |
| End of Year Eight | |
| End of Year Nine | |
| End of Year Ten | |
| End of Year Eleven | |
| End of Year Twelve | |
| End of Year Thirteen | |
| End of Year Fourteen | |
| End of Year Fifteen | |
| End of Year Sixteen | |
| End of Year Seventeen | |
| End of Year Eighteen | |
| End of Year Nineteen | |
| End of Year Twenty | |
| End of Year Twenty-one | |
| End of Year Twenty-two | |
| End of Year Twenty-three | |
| End of Year Twenty-four | |
| End of Year Twenty-five | |

# TO-5



- Annual cancellation ceiling listing
  - In final proposal only
- Usually ~ 105% of outstanding debt for year
  - Amount over 100% represents ESCO's transaction costs including early termination penalty from financier
  - Should not include lost profit or service costs
- Exact principal balance of loan (by month) is often attached to expedite loan payoff in the event of termination for convenience (T for C)
- Per Federal Acquisition Regulations (FAR), T for C would be negotiated

# T for C Variants



- Partial Termination for Convenience
  - Terminated by ECM or facility
  - Recommend terminating longer-payback ECMs (otherwise, partial termination may extend TO term)
- Complete Termination for Convenience
  - Negotiated settlement not to exceed Annual Cancellation Ceiling in Schedule TO-5

# Summary

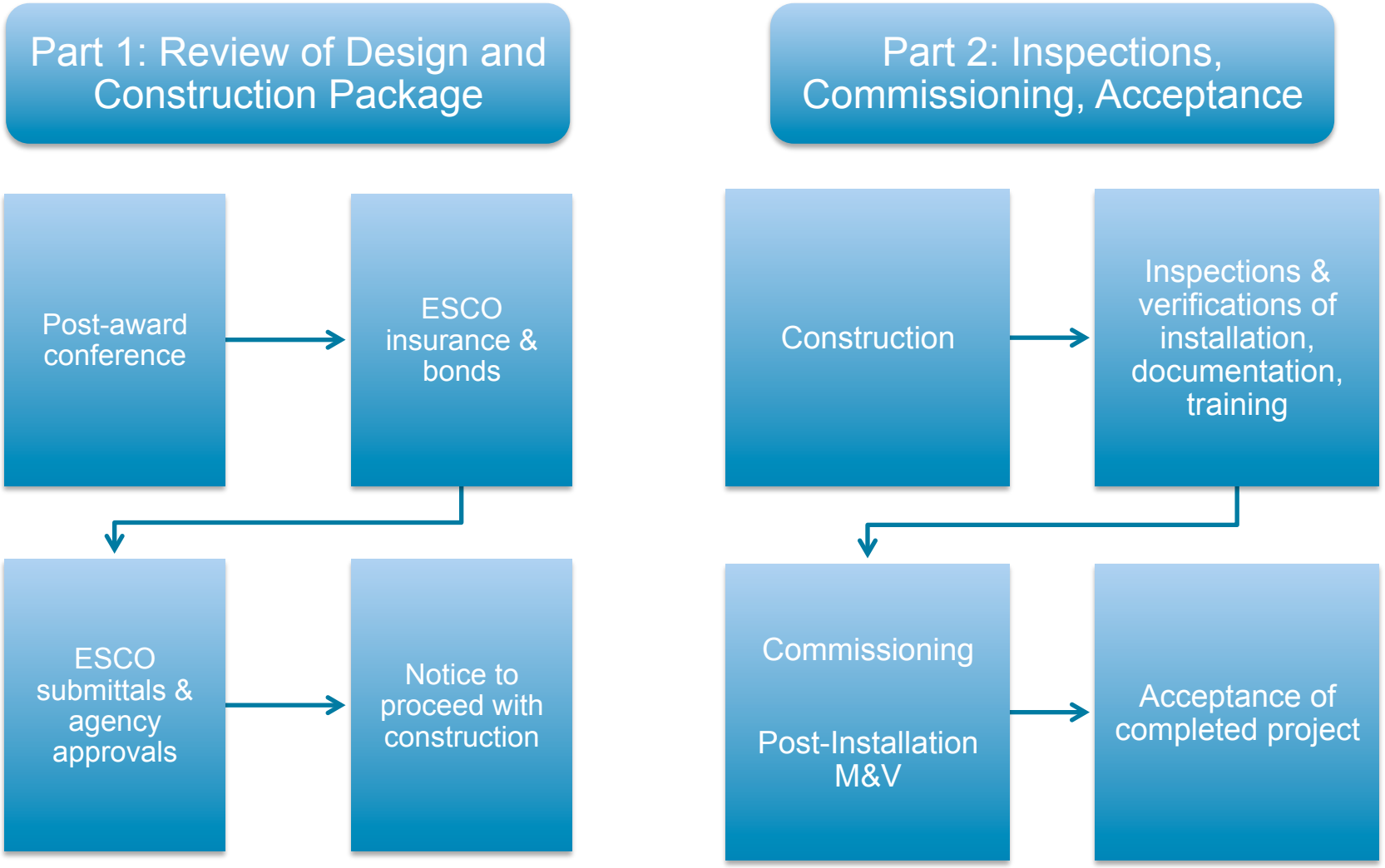


- ESPCs are paid from savings
- Schedules define costs and savings
  - TO-1: Guaranteed Annual Cost Savings & Annual Contractor Payments
  - TO-2: Direct Cost and Markups
  - TO-3: Performance-Period Cash Flow
  - TO-4: First-Year Energy & Cost Savings by ECM, Technology Category
  - TO-5: Cancellation ceiling for negotiations of termination
- Term set by investment payback duration

# Next –
# Phase 4:
# Design, Construction, and Acceptance

# Phase 4: Implementation





# Submittals and Approvals



- Designs, plans, and schedules per TO RFP requirements
  - Design and construction package allows agency COR to verify that installation will comply with contract requirements
  - ESCO's submittals constitute requirements of the contract after acceptance by agency
  - Acceptance does not relieve ESCO of design liability and standard-of-service requirements

# Inspection and Acceptance of Installed ECMs



- Inspections and verifications
  - Specified equipment was installed properly (Cx report)
  - M&V data confirms potential of ECMs to generate the guaranteed savings (post-installation report)
  - Other documentation (O&M manuals)
  - Required training is provided
- ESCO resolves outstanding issues and provides required documentation and training

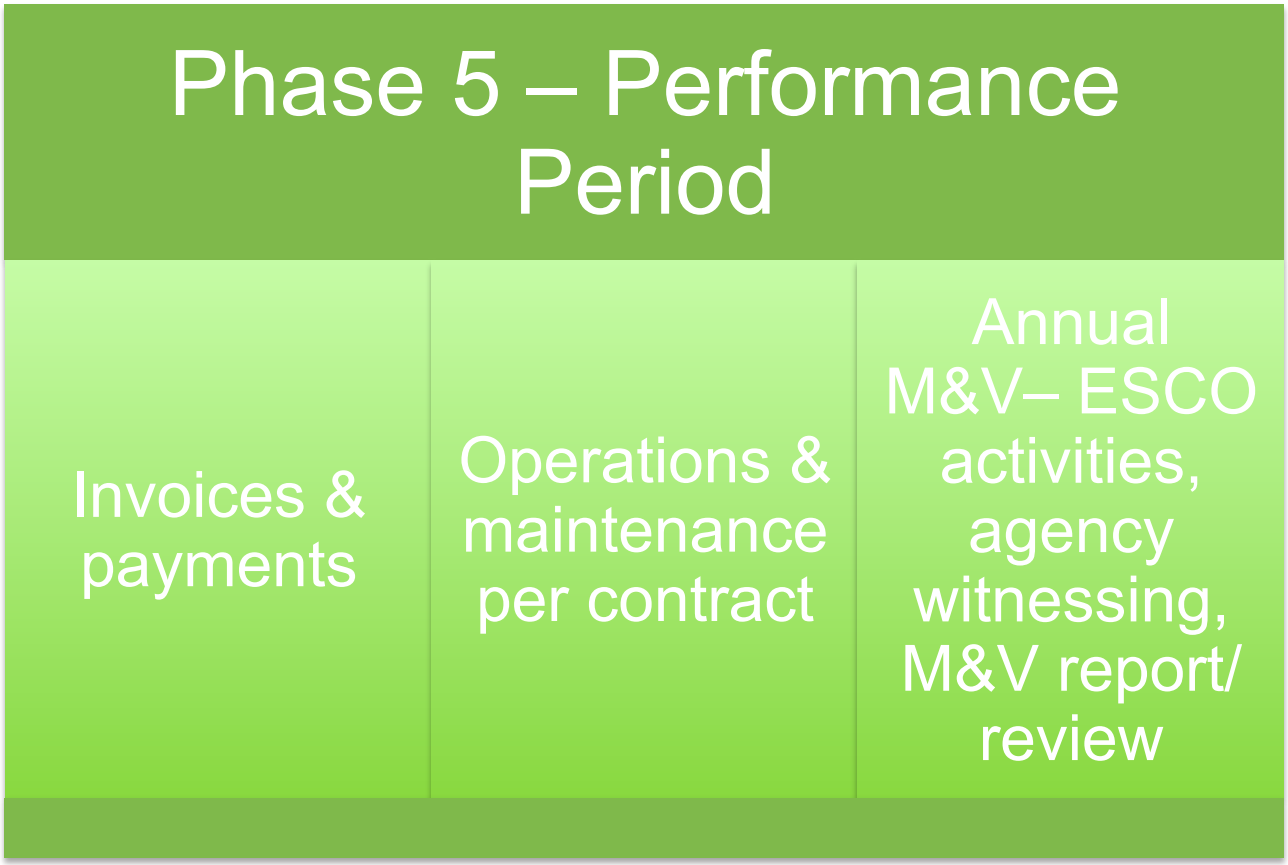
# Commissioning



- Verifies and documents proper installation and functional performance of equipment
  - "Kicking the tires"
  - Does installation meet "design intent"
  - e.g., are temperature and lighting requirements being met (per directives of TO RFP)?
- Mostly completed before acceptance
  - Some checks after acceptance are required, such as summer performance of chillers, steam trap performance in winter

# Phase 5 – (Post-Acceptance) Performance Period






**The *Agency* is responsible for ensuring that the ESCO delivers on the guarantees.**

# Invoices and Payments



- Invoicing begins after CO has formally accepted the installed project
- Payments are generally annual-in-advance to minimize agency interest expense
  - This is legal since project has already been installed; recourse is still available for any shortfalls discovered
  - Payments can also be monthly, annual-in-arrears, etc.
- Agency is responsible for verifying that invoices contain any required documentation of services provided before issuing payment

# Typical Performance Period Services from ESCO



- Performance-period services to be performed by ESCO are detailed in the Task Order

- M&V services – required annually
- Periodic retraining of agency O&M staff
- O&M services
- Repair and replacement services

# Measurement and Verification



- 13 months after installation, ESCO submits first annual M&V report. The site-specific M&V plan established:
  - Intervals for measurement (at least annual)
  - How ECM performance will be verified and savings will be calculated
  - Documentation contractor must provide during verification
- Government must review and approve M&V report documentation

# Review and Approval of M&V Reports



- Agency is responsible for review and approval of periodic M&V reports
- Agency witnessing and spot checks are recommended to independently gather information for evaluating M&V reports
- Agency should confirm O&M is being done per the TO requirements to assure expected performance and savings

# Annual Reconciliation of Energy Savings Performance



- If actual savings fall short of guaranteed savings, ESCO must reimburse government
- Government must review and inspect performance of ECMs
  - If ECMs, en masse, do not meet guaranteed savings, contractor must correct deficiencies or payments will be adjusted
  - Shortfalls are reconciled in 13th month and annually thereafter

# Closeout of Task Order



- Agency notifies ESCO by letter that the performance period is over and payments will cease
- ESCO transfers title if it has retained ownership of any equipment
- Agency may negotiate for continuing services from ESCO

# Questions?